

Remarks/Arguments:

Applicants' claim 29 has been amended to include similar features to dependent claims 39, 40 and 41. No new issues have been raised since the features in claims 39, 40 and 41 have already been examined. An RCE should not be required for entry of this Amendment.

On page 2, the Official Action rejects claims 30, 34 and 35 under 35 U.S.C. §112, second paragraph, as being indefinite. The Official Action states that the recitation of "*partial-space orthogonizing means*" does not have proper antecedent basis. Thus, Applicants have amended claims 30, 34 and 35 to replace the recitation of "*partial-space orthogonizing means*" with "*partial-space orthogonalizing section.*" Withdrawal of the rejection is respectfully requested.

On page 3, the Official Action rejects claims 29, 30, 33, 34, 35 and 39-43 under 35 U.S.C. §103(a) as being unpatentable over Onggosanusi (U.S. 7,110,378) in view of Wallace (U.S. 2002/0193146) and Alastalo (U.S. 2001/0047424). It is respectfully submitted, however, that the claims are patentable over the art of record for at least the reasons set forth below.

Applicants' invention, as recited by claim 29, includes feature which are neither disclosed nor suggested by the art of record, namely:

... wherein the SDM transmission evaluation criterion and the SDMA evaluation criterion are to be calculated depending upon a channel estimation value and received quality received from the SDM compatible mobile station and the SDMA mobile station within the communication area ...

Claim 29 relates to judging whether a mobile station is SDM compatible based on SDM evaluation criterion and furthermore judging whether a mobile station is SDMA compatible based on SDMA evaluation criterion. Specifically, the SDM evaluation criterion and the SDMA evaluation criterion are calculated dependent upon a channel estimation value and received quality value. Support for these features can be at least found on pages 28-31 of Applicants' specification, and furthermore shown in Applicants' Figs. 1, 3A and 3B. No new matter has been added.

On page 9, the Official Action rejects claims 39, 40 and 41 under a combination of Wallace and Alastalo. Specifically, the Examiner believes that paragraphs [0104-0106] of Wallace suggest that SDM and SDMA evaluation criterion are calculated based upon channel estimation and received quality. Applicants, however, respectfully disagree. In paragraphs

[0104-0106], Wallace suggests determining the number of antennas of the mobile unit (*"for a mixed mode system, each participant will typically require information regarding the configuration and operating mode of each communication link"*). Thus, the number of antennas, and therefore determination of SDM/SDMA compatibility is determined by querying the mobile user (*"the process starts with a query to the mobile user to determine diversity capability ... additionally, the base station may require information about the types of combining used for multiple receive antennas"*). Wallace is determining SDM/SDMA compatibility by asking the mobile unit how many receive antennas are being utilized (e.g. two antennas would indicate that the mobile unit is SDM compatible).

Wallace also suggest requesting information regarding channel quality. The channel quality transmitted back to the base station, however, is not utilized to determine the number of receive antennas, and therefore is not utilized to determine SDM/SDMA compatibility. Specifically, Wallace suggests that the channel quality information is transmitted to the base station for controlling the base station as to whether redundant data should be transmitted (*"if the link quality is poor antenna diversity is used to transmit the same data signal for multiple antennas"*). Thus, Wallace is determining SDM/SDMA compatibility by asking the mobile unit how many antennas are present (not by channel estimation or received signal quality).

Applicants' claim 29, is different than the art of record because SDM evaluation criterion and SDMA evaluation criterion are calculated dependent upon channel estimation and received quality (*"... wherein the SDM transmission evaluation criterion and the SDMA evaluation criterion are to be calculated depending upon a channel estimation value and received quality received from the SDM compatible mobile station and the SDMA mobile station within the communication area ..."*). As shown in Applicants' Fig. 1, base station 1 judges if the mobile stations are SDM compatible and SDMA compatible. This judging is done by use of predetermined SDM evaluation criterion and a predetermined SDMA evaluation criterion. Specifically, these two criteria are computed based upon a channel estimation value and a received quality value. This feature is at least supported on pages 28-31 of the specification (*"the mobile feeds the calculated channel estimation value ... and received quality ... back to the base station 1 through a communication channel ... deciding means 203 of the base station 1 decides whether or not SDM transmission is available with the preferentially allocated mobile stations MS ... depending upon an evaluation value calculated ... searching for an SDMA available mobile station ... is based on a channel estimation value or received quality*

information feed back to the base station 1"). Thus, Applicants determine SDM and SDMA compatibility based upon a channel estimation value and a received quality value.

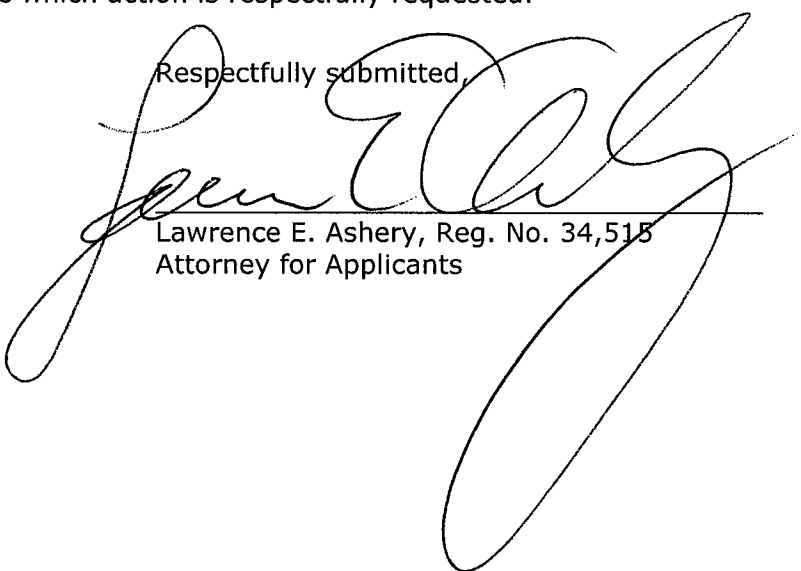
Neither Onggosanusi, Wallace, Alastalo nor their combination suggest the features in Applicants' claim 29. Thus, claim 29 is patentable over the art of record for at least the reasons set forth above.

Dependent claims 30, 33, 34, 35 and 39-43 include all of the features of claim 29 from which they depend. Thus, these claims are also patentable over the art of record for at least the reasons set forth above.

On page 11, the Official Action rejects claims 31 and 32 under a combination of Onggosanusi, Wallace, Alastalo and Walton (U.S. 2003/0128658). Neither Onggosanusi, Wallace, Alastalo, Walton nor their combination suggest the features in claim 29. Thus, claims 31 and 32 are patentable over the art of record in view of their dependency on patentable claim 29.

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,


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